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A design for a retail
mail order establishment

Architecture

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A DESIGN FOR A RETAIL MAIL ORDER
ESTABLISHMENT

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BY

JOHN REED ^vFUGARD

THESIS

FOR THE

DEGREE OF BACHELOR OF SCIENCE

IN

ARCHITECTURE

COLLEGE OF ENGINEERING

UNIVERSITY OF ILLINOIS

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THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

JOHN REED TUGARD.

ENTITLED A DESIGN FOR A MAIL ORDER ESTABLISHMENT.

IS APPROVED BY ME AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE

DEGREE OF BACHELOR OF SCIENCE IN

ARCHITECTURE.

John Watrous Case

Instructor in Charge

APPROVED:

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Architecture

168144

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THESTIS DESIGN

for a

RETAIL MAIL ORDER ESTABLISHMENT

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Great advancement has been made in the arts, crafts and trades, but along no line has there been more advancement than long the line of mercantile trade.

From the long and steady stages of advanced methods in mercantile trade, the Retail Mail Order Establishment has emerged within the last fifteen years, and it would have required the prophetic vision of a seer of the olden time to foresee the remarkable future in store for it; to foresee the wide popularity its business methods were to acquire, and to anticipate the commanding position the establishment would occupy in the commercial world.

The theory of the Retail Mail Order Establishment is to supply the public with the best the world's markets afford at a price which does not represent a series of profits to innumerable middlemen. This theory, being revolutionary, has aroused the antagonism of the whole business world; and probably for this reason, the names of our two largest enterprises of this nature - Sears, Roebuck & Company, and Montgomery Ward & Company, are fresh in the mind of nearly every person this whole country over, from the city merchant, whose trade is curtailed by them, to the farmer of the far off Western prairies, who gives the catalog of one of these concerns an equal place on the parlor table with the

family bible and the album.

From the fundamental practicable principles, a design has been made under ideal conditions of site and resources, and showing the ideal development of the Retail Mail Order Establishment.

The Establishment is to be situated near a large city - preferably a manufacturing city - and upon a trunk line railroad. The conditions being ideal, the most prominent and imposing feature of the group will be given the most prominent position. This building being the Merchandise building, the store house for all goods handled by the Establishment, is placed upon the highest point of ground; the slope being away from the Establishment toward the city.

In the consideration of the problem of grouping the masses of buildings in a manner required by the nature of the problem, and according to the aesthetic tastes, we may divide our solution into two general classes of buildings: The buildings of the Establishment, and the buildings of the community in which the Establishment is situated.

The buildings of the Establishment may be further divided into three groups, classified in accordance with the three divisions of the business:

1. As all orders are received by reason of advertising matter sent out in the shape of catalogs, the advertising and printing division plays an important part in the business; hence, the Printing building.

2. As the life of the business is dependent upon the elaborate system of files and indexes, giving the name, address and purchases of every customer, revised to date; and, as the loss of these files would result in the suspension of the business, this division of the business requires a building of the highest type of fireproof construction - the General Office building.

The Administration building, which houses the President, Vice-President, Secretary, Treasurer and General Manager, may also be classed under this division.

3. On account of the enormous scope of trade and variety of wares, the merchandise department is necessarily by far the largest department of the Establishment. All goods are stored in the Merchandise building, which is divided into sixty-five different departments, divided as to the nature of the goods.

Under this division also comes the Power and Water plants, with all the necessary mechanical equipment for the development of power for heat, light, elevators, pneumatic tubes, refrigerators, ventilation and the numerous other contrivances devised to facilitate the transaction of business.

The buildings of the community may be divided into two general classes - Public and Private. Under the head of Public buildings are the Town Hall, Jail and Fire Station combined, School, Theater, Club, Gymnasium, Library, Church and Hospital. The Private buildings include the residences of the several thousand employees of the Establishment.

THE PRINTING BUILDING

The Printing building contains the office of the advertising manager, and the advertising mailing department; twenty perfecting presses, nine job presses, electrotpe foundry, engraving department, bindery and composing room, accommodating one hundred and fifty men. This building is similar in size and design to the General Office building, being 200 x 100 feet in size, and four stories high.

GENERAL OFFICE and ADMINISTRATION

The General Office building incorporates the following features and departments:

- Employees' Insurance Society
- Employees' Savings Bank
- Index Department
- Entry Department
- General Correspondence Department
- Adjustment Inspection Department
- Traffic Department
- Routing Department
- Mail Auditing Department
- Cash Crediting Division

This building is 200 x 100 feet in size and contains four stories.

The Administration building contains offices for the President, Vice-President, Secretary, Treasurer and General Manager; also the sales room for retail trade, which is connected with the Merchandise building by an elaborate system of pneumatic

tubes and telephones, reaching to every department. A restaurant for the accommodation of visitors and the officers is placed in the basement of this building.

MERCHANDISE BUILDING and POWER PLANTS

It is a great problem to devise a plan best suited for handling goods over such an immense area, and at the same time to have the best light at the second story, as the second floor is a continuous expanse over the entire ground area. The railroad tracks are in a subway and enter the building at the basement level. The two annexes are in the rear of the main building, and are sixty feet apart; located between them is the railroad depot where 200 freight cars may be handled in a day. When the tickets or orders are delivered to the departments of this building by means of pneumatic tubes from the General Office building, the process of collecting the goods to fill each order goes on.

Smaller goods are all located above the second floor and all the heavy goods on the second floor or below. Each department receives its orders and all those above the second floor collect them in baskets, which are immediately taken by light trucks to spiral chutes located conveniently to all departments. The chutes are steel, eight feet in diameter, with three spiral planes to each one, and three openings to each chute in each story. Baskets containing the goods are put into one of these chutes according whether they go by mail, express or freight. Centrifugal force in the chutes causes friction against the sides, so as to

regulate the speed of the descent of the heavy and light articles. At the bottom the baskets slide out on a horizontal travelling conveyor, which runs all around the sides of the court in the center of the building, and conveys the goods to the mail, express or freight shipping departments; therefore goods are delivered automatically to the proper shipping room. Goods stored below second floor are conveyed upward by inclined travelling conveyors and each department has a large freight elevator.

There are two sets of railway switches - the incoming, and the outgoing freights. The construction of the building is mill construction, with floors of solid wood 6" thick. No joists are used, so clear ceilings are obtained. Fire walls are built so as to divide the building into sections of 12,000 feet. All stairways, elevator shafts and chutes are surrounded with brick walls, with steel doors. The tower is 50 feet square and 240 feet high, and contains water tanks of 200,000 gallons capacity.

All goods are handled through the shipping room. There are two general divisions - merchandise building for all small merchandise, and the annexes for bulky goods and groceries, which are shipped in their original packages. All goods are received on the first floor and trucked to the different departments. The elevators are located on the outside walls and the shelves are so arranged that all goods are received on the outside and are delivered toward the court in the center; thus the incoming freight never crosses or interrupts the progress of the goods going out.

The Power Plant occupies a ground space of 15,000 square feet and provides for generators, boilers and engines on the first floor; connecting pipes and automatics in the basement. The boilers have a capacity of 10,000 H.P., and the chimney is 14 feet in diameter and 200 feet high.

In the engine room is a large travelling crane; also air compressors, elevator pumps and the electric switchboard.

The Water Plant occupies a ground space of 15,000 square feet and contains the artificial ice plant, fire pumps, all the water pumps of the Establishment, and the heating and ventilating apparatus. The boilers have a capacity of 2000 H.P., and the chimney is 10 feet in diameter and 200 feet high.

OUTLINE of the SEARS, ROEBUCK & COMPANY'S PLANT

The buildings are arranged to secure:-

1. Most economical handling of goods over a large area.
2. Provision for the best and the most rapid shipping facilities.
3. To properly care for the great army of the employed.
4. To provide security against fire and injury.

Buildings necessary:-

1. Advertising and Printing departments.
2. Elaborate file and index system for names of customers; Executive and clerical departments fully supplied with fireproof vaults.

3. Merchandise department, sub-divided into some sixty-five departments.

OUTLINE as to AREAS

Building	Floors	Ground Area	Single Floor Area	Total Floor Area
Merchandise	9	136704	B to 2-132240	402720
			3 to 9-115840	810880
			Tower - 2116	8464
Annex "A"	4	79458	76230	304920
Annex "B"	4	52896	50600	202400
Administration	3	46620	43440	130320
Power Plant	2	29274	27830	55660
Printing	4	21282	20080	80320
Totals		366234	468376	1995684

Merchandise building 1100 feet long 340 feet wide.

DESIGN of SEARS, ROEBUCK & COMPANY'S BUILDINGS

In the structure of these buildings the architect strove to obtain the highest type of efficiency consistent with the absolute economy of space and money. The composition was made subservient to structural requirements and such structural requirements and such structural features developed to provide a pleasing composition. Space well lighted, ventilated, and with the most approved arrangement for the storage of goods and the comfort of employees, was the requirement.

Richbrown paving brick was used for the exteriors, and

the trimmings are in terra cotta. Given the material at hand for construction and structural features for decoration, the brick and terra cotta architecture of Tuscany naturally suggested itself as appropriate, with such restrained use of brick patterns and terra cotta decoration as would be consistent. The use of terra cotta decoration suggested the use of color for backgrounds to accent such decorations. The lunettes and frieze of the tower are glazed blue terra cotta. The frieze of the Administration building is developed from the scheme of marble inlay of San Miniato at Florence, and blue is used in the background. Decorated mouldings are avoided on account of the expense. Sills and lintels are of terra cotta and are chief features in decoration - hence the horizontal lines are emphasized. The top of the tower is the only place where elaborate treatment of decoration is used.

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June, 1906

"Designing a Great Mercantile Plant"

LIST OF DRAWINGS SUBMITTED --

Block Plan of the Entire Establishment.

Detail Plan of the Principal Buildings.

Bird's Eye View of the Entire Establishment.

SCHEDULE OF BUILDINGS AND ROOMS OR DEPARTMENTS.

Merchandise Building.

Tower		2500 sq. ft.	
Offices	6 suites	each	2100 "
Packing, Routing and Shipping Depts		13500	"
Mail, Express and Freight Depts		12000	"
Elevators	24		
Merchandise storage Depts	60	each	2400 "

Power Plant.

Engine Room	6000	"
Boiler Room	2500	"
Water Plant		
Pump and engine Room	6000	"
Boiler Room	2500	"

Administration Building.

Rotunda	1500	"
Fire proof Vaults	2	
Presidents Suite	1500	"
Vice President's Suite	1500	"
Secretary's Suite	1500	"
Treasurer's Suite	1500	"
Retail Sales Room	1400	"
Resturant, Kitchens etc. in the basement		

General Office Building.

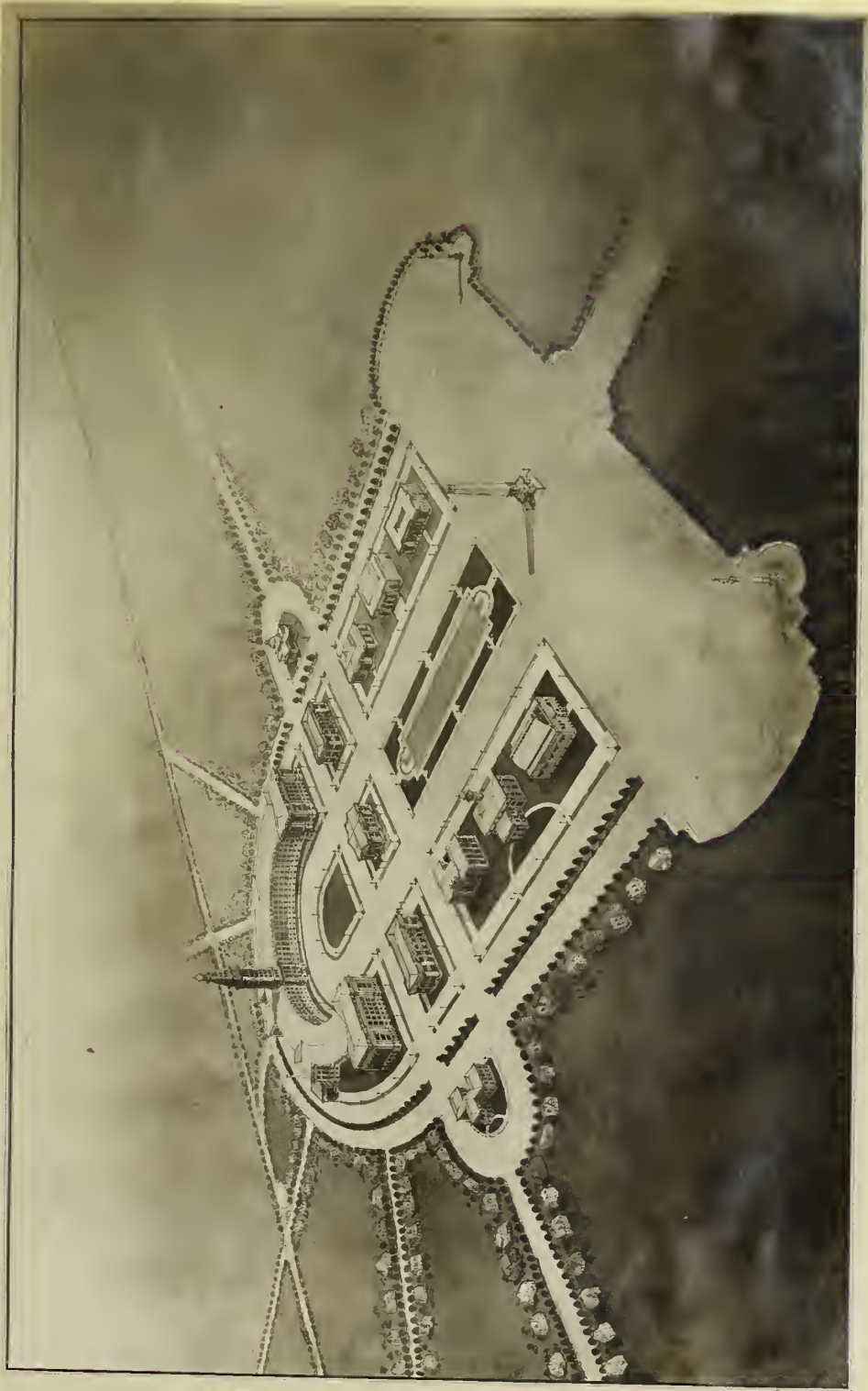
Bookkeeping Department	4025	sq.ft.
Mail Opening Department	4750	"
Entry Department	4000	"
Routing Department	4000	"
Index Department	4000	"
Fire proof Vaults		
Transportation Department	1250	"
Time Keeping Department	1200	"

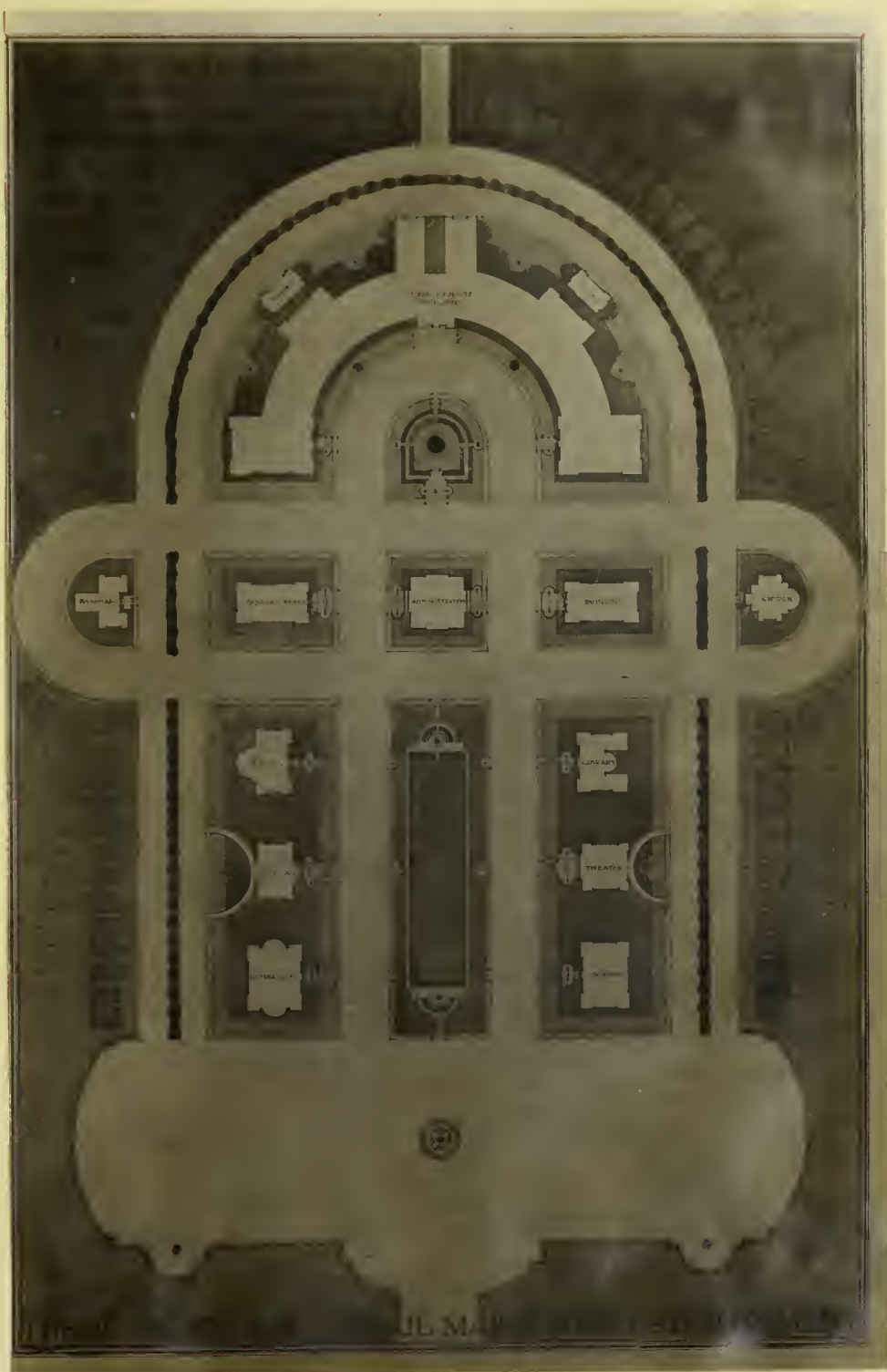
Printing building.

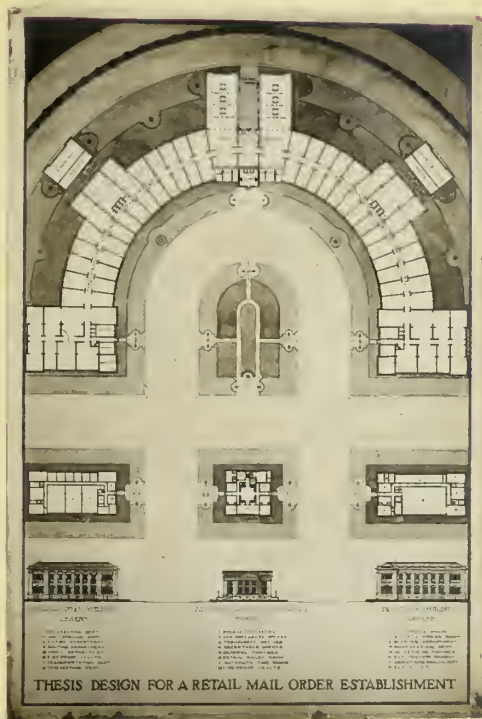
Composing Room	4750	"
Rotary Press Room	9000	"
Bindery	1200	"
Bookkeeping Department	1750	"
Advertising Manager	1400	"
Electrotype Foundry	1500	"
Advertising Mailing Department	1500	"
Elevators		

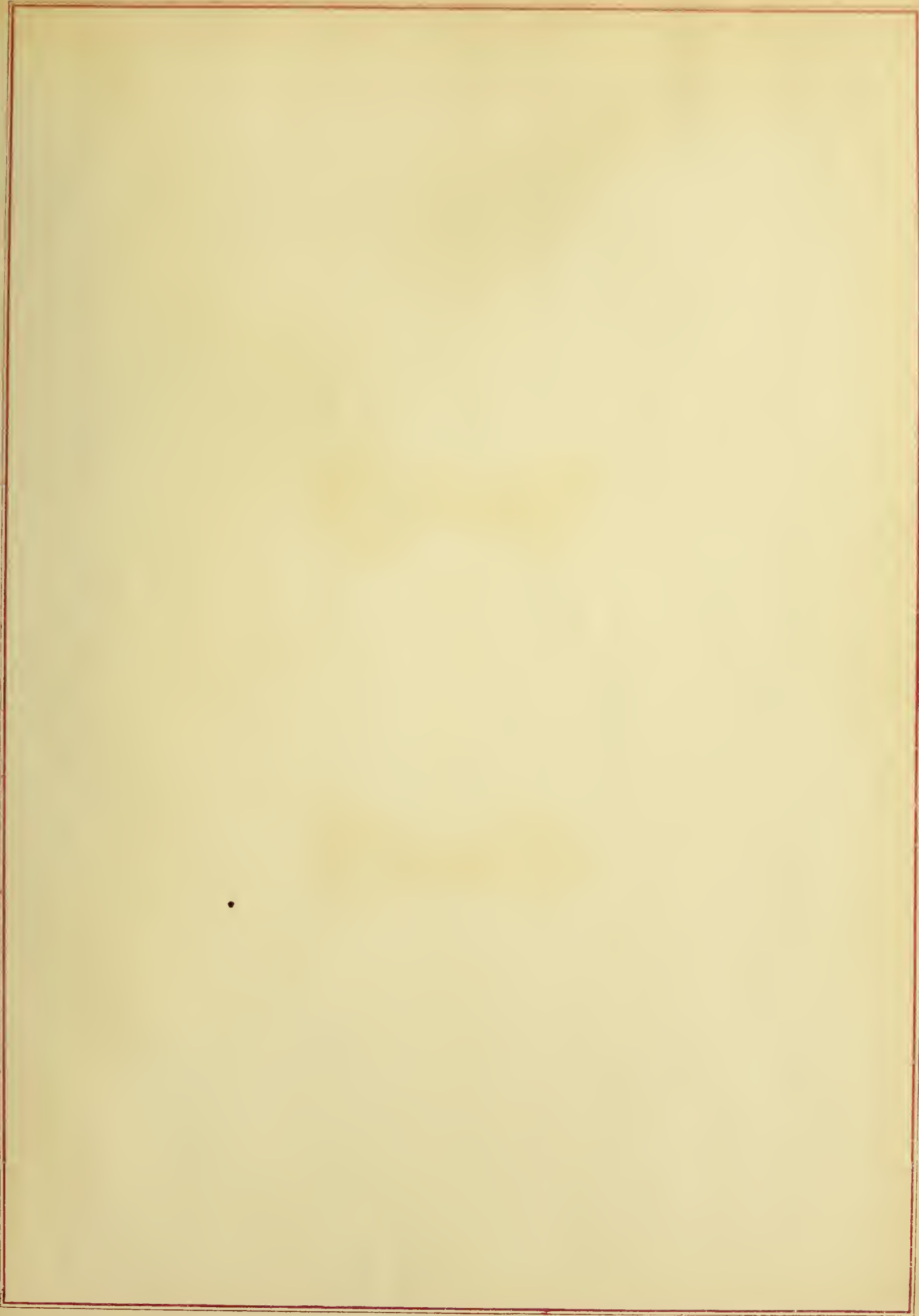
Note --

These above areas are only approximate and are taken on the first floor only.





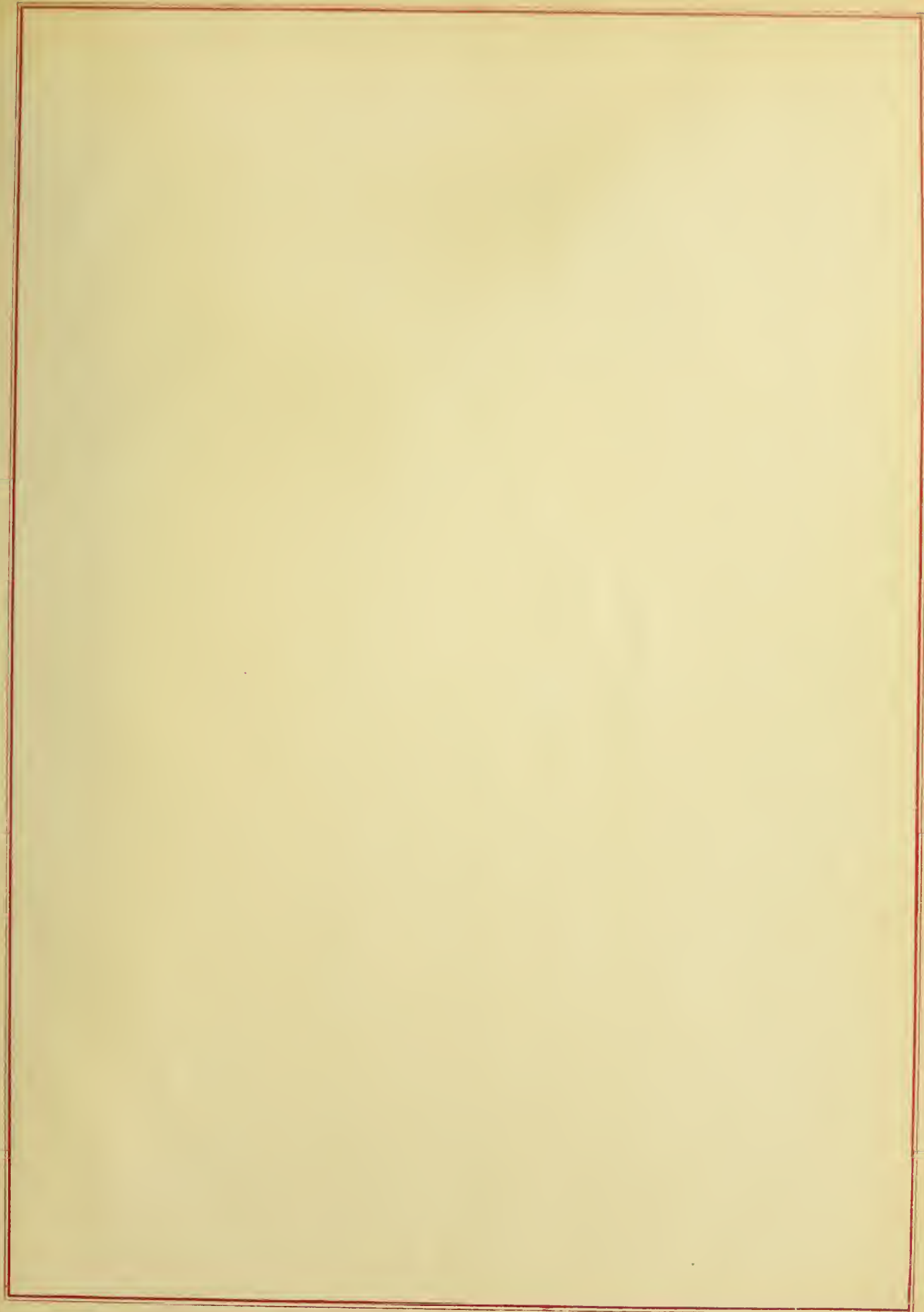


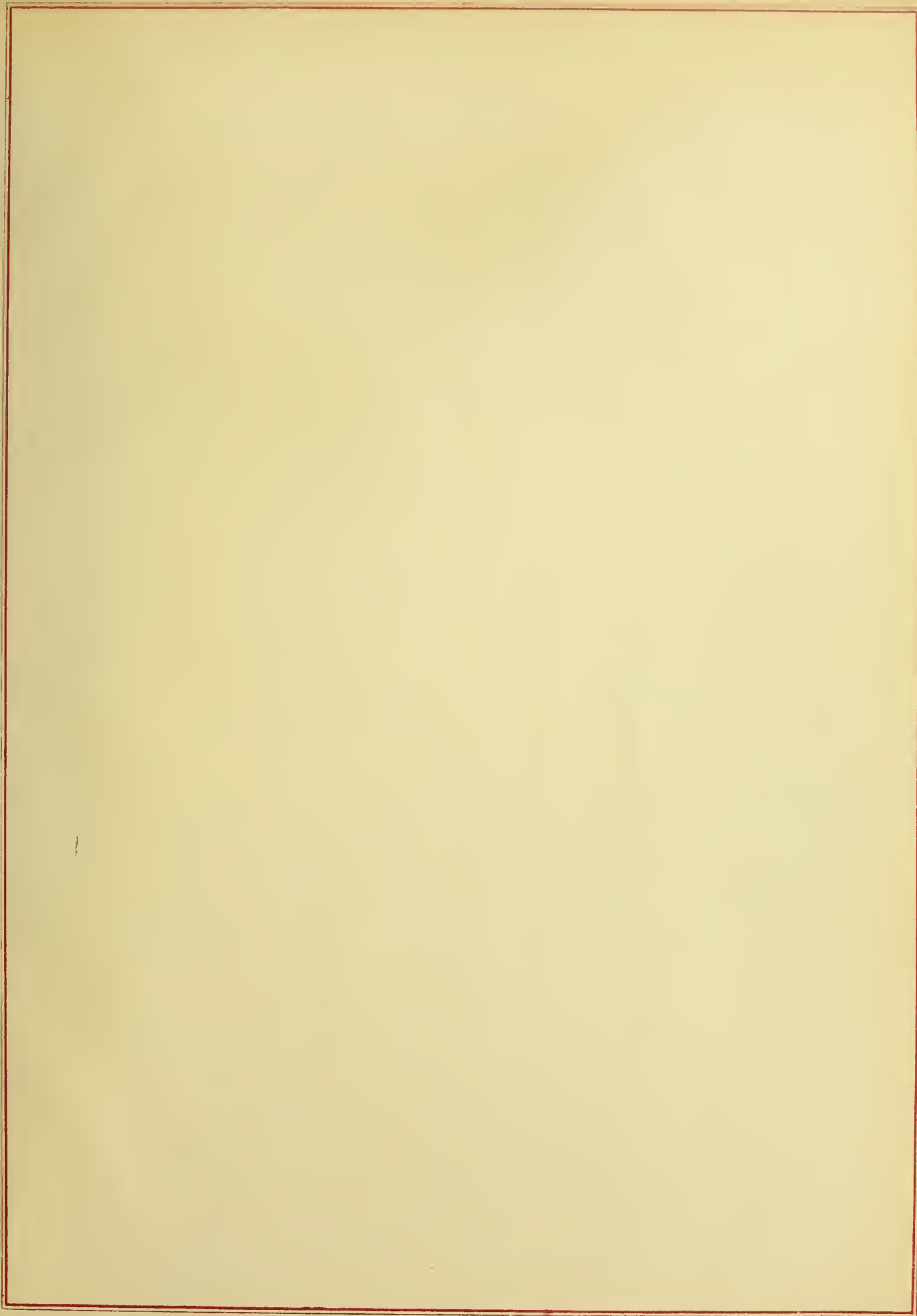








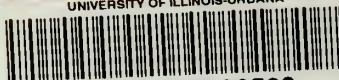








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